

From: BJ Miller
Sent: Monday, January 05, 2004 1:06 PM
To: Guivetchi, Kamyar
Subject: numbers

Kamyar,

Please route this out to AC members.

Fellow AC members,

We all seem to be struggling with how to deal with the "numbers" issue in Chapter 1. Are future urban demands going to be 2 MAF or 3 MAF per year, and could it be even more or less? Will eliminating the groundwater overdraft take 1 or 2 MAF per year? For that matter, why eliminate it at all? Are the additional environmental needs 0.5 or 1.0 MAF per year? Is that all, only 1 MAF per year? Is agricultural water use going to stabilize or could it be 1 MAF per year more or less?

Maybe if we looked at the numbers issue in a different way, we could all agree. I suggest the following:

Suppose we consider all of these numbers as elastic. Generally, the higher the number, the greater the cost. The cost must be measured not only in dollars, but also in other terms--environmental, societal, economic, etc. Put another way, the greater the investment, the higher the number.

So, for example, urban demands could increase by only 2 MAF per year, but that would require a certain investment for efficiency improvements. On the other hand, if the investment were lower, the additional urban demand would be higher, as much as 3 MAF per year. If the investment were very large, the additional need might be reduced to zero.

As the additional urban needs go down and the costs go up, the need for state/federal financial assistance increases.

So, rather than this being an argument over how much water urban areas "need" in the future, it becomes a search for accurate representation of the relationship between investment and return.

We could carry this approach on to the issue of ag-to-urban transfers: If the investment in urban efficiency is low, the need for such transfers will increase. In other words, transfers from agriculture will be the primary way that urban areas get the water to match their supplies and needs. Another way that urban areas could get water is by storing water when it is plentiful, for use when it is not. Water can be stored in the ground or in surface reservoirs. Both of these options have costs. Generally speaking, the higher the cost, the greater the storage and the more supply that can be obtained. Again, for all of these options, there are "opportunities" for state/federal financial assistance.

Urban areas could also get more water by increasing imports. This has costs as well.

Environmental needs could be addressed in the same way. The higher the needs to be met, the greater the costs. Some of these needs are not optional; they must, by law, be met. The more of these needs that are met, the less water that will be available for urban and agricultural use. This will shift the economics of urban and ag options. If more environmental water means less urban and ag supply, then more efficiency and more ag-to-urban transfers become necessary and higher investment is required. The higher the investment, the greater the need for state/federal assistance.

The job of the Water Plan would be to explain these relationships clearly and accurately. The AC's job becomes one of making sure that these relationships are explained clearly and accurately.

In the simplest terms, the issue is not how much water is "really" needed.

It's more of a "pay-your-money-take-your-choice" issue.

We can extend this approach to consideration of the "bad news" events. What will happen if we have less snowpack, Delta flooding, and a serious drought? What are the chances of those three things occurring? If we want to avoid or mitigate those effects, what investment will be required? It's like buying an insurance policy--the higher the rate, the greater the coverage, but at some point, the rates become unreasonably high.

So, while we might be able to agree on 80%, it looks like we are going to have a hard time agreeing on that last 20% that involves the numbers. If we cannot agree, it is doubtful that others will agree. Therefore, I suggest that we turn our attention to better understanding these investment-return relationships and to explaining them in a way that will help those who will make the decisions.

For the document we are now reviewing, we need only explain this issue, perhaps with some ranges to bound it. We should strive to explain the big connections among environmental water use, ag and urban efficiency, transfers, infrastructure, catastrophic events, costs, and the role of state/federal financial assistance. We would say that a more quantified treatment of this issue will be presented later.

BJ